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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/069,588 | 02/27/2002 | Keizo Akutagawa | Q68338 | 3867 |

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EXAMINER

ENGLISH, PETER C

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| ART UNIT | PAPER NUMBER |
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3616

DATE MAILED: 04/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|-------------------------------|----------------------------------|--|
| Office Action Summary | Application No. 10/069,588 | Applicant(s) AKUTAGAWA ET AL. | |
| | Examiner Peter C. English | Art Unit 3616 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-7 and 11-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-7 and 11-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>20041014</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 13 is objected to because: at line 1, "claims" should be "claim". Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. Claims 1, 3-7 and 11-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification fails to provide an adequate description of the manner in which vibration is applied in the "width direction" (claim 1, line 6) and the "load support direction" (claim 3, line 2; claims 15-18, lines 2-3) of the tire. Specifically, the embodiment of Fig. 7 is described as having an actuator for applying vibration to the tire. However, the construction of the actuator is not described, nor is its interconnection with the tire.

3. Claims 1, 3-7 and 11-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, at lines 4-5, "micro-vibration having a higher frequency than a response frequency of change in a behavior of the vehicle" is indefinite because it is unclear what constitutes the "response frequency". Though this term is mentioned in the specification, it has not been defined. Since the "response frequency" is undefined, one cannot know what frequency would be "higher" than the response frequency. Therefore, it is impossible to determine the frequency level defined by the claim.

Claims 16-18 are indefinite because they contradict claim 1 from which they indirectly depend. Claim 1 states that vibration is applied in at least one of a revolution direction and a width direction. However, claims 16-18 refers to vibration applied "in the load support

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direction" (lines 2-3). Note that it is claim 3 which first introduces vibration applied in the load support direction.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3 and 15 (as best understood) are rejected under 35 U.S.C. 102(b) as being anticipated by Baun (DE 3610519). Baun discloses a control system for increasing the friction force between a tire and a road surface. The friction force is increased by using an actuator to apply a medium to high frequency vibration to the tire. See the abstract and Figs. 3 and 4. Because the actuator is angled with respect to vertical (see Fig. 3), the vibration has a horizontal component that is applied in the width direction of the tire. Baun's high frequency vibration is considered to be "higher" than a given response frequency of the vehicle, as is broadly claimed.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

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the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 4-6 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baun (DE 3610519). Baun (discussed above) discloses the use of a medium to high frequency vibration, but fails to specify the frequency range of the vibration. It would have been obvious to one of ordinary skill in the art to select the frequency ranges identified in claims 4-6 in order to maximize the friction force between the tire and the road surface. Further, the selection of optimum values within prior art general conditions is generally recognized as being within the level of ordinary skill in the art.

Response to Arguments

9. Applicant's arguments filed 24 January 2005 have been fully considered but they are not persuasive.

With respect to the rejection under 35 USC 112, first paragraph, applicant argues that "the actuator may take on various different forms, and applicants do not intend to be limited to any particular form of actuator, so long as it can perform the stated function..." While applicant is indeed entitled to claim the actuator broadly, this does not excuse applicant from the requirement to provide an adequate written description of the claimed invention. It is not enough to suggest that any and every possible actuator may be used. The description should set forth the manner in which the claimed invention is embodied. Further, applicant argues that "several examples of the actuator are directly disclosed". However, these examples of actuators are not disclosed specifically for use in applying vibration in the "width direction" (claim 1, line 6) and the "load support direction" (claim 3, line 2; claims 15-18, lines 2-3) of the tire. No description is provided of how such actuators would be interrelated with a vehicle tire in order to apply vibration in the width and load support direction.

With respect to the rejection under 35 USC 112, second paragraph, applicant states, "For purposes of clarification, a response frequency is a dynamic frequency exhibited, for example, in yaw rate during running". In connection with this proposed definition of "response frequency", applicant cites page 4, lines 5-9 of the specification. However, page 4, lines 5-9 fails

to set forth such a definition, nor does any other portion of the specification provide any such definition. Further, applicant argues that the above definition is "well known in the art".

However, applicant provides no support from either the specification or the prior art for this assertion. Furthermore, it would appear that many different definitions could be associated with the generic term "response frequency". For example, the response frequency could be defined in terms of a vehicle's roll rate, pitch rate, vibration rate, etc. Still further, applicant asserts that the definition of "response frequency" is "very obvious for a skilled person", but again applicant provides no evidence that supports this assertion. Finally, applicant states that the response frequency "can be considered to fall in the range of up to 10Hz". However, no support for this frequency range is cited from the specification or any other source.

Applicant argues that Baun's system fails to control the coefficient of friction. The examiner disagrees because Baun's discussion of improving the "grip" of the wheel is synonymous with improving the coefficient of friction. If the coefficient of friction was not improved, then Baun's system would be unable to improve the grip of the wheel on slippery roadways, as stated in the abstract.

With respect to applicant's request for an interview, applicant is invited to contact the examiner by telephone to schedule an interview. It is noted, however, that interviews merely to restate arguments of record will not be granted.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter C. English whose telephone number is 571-272-6671. The examiner can normally be reached on Monday through Thursday (7:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul N. Dickson can be reached on 571-272-6669. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Peter C. English 4/4/05
Primary Examiner
Art Unit 3616

pe
4 April 2005